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| 10/532,646 | 12/05/2005 | Nicolas Goujon | 14.0211-PCT-US | 5778 |
| 28116 | 7590 | 06/01/2009 | EXAMINER | |
| WesternGeco L.L.C. | | | | HUGHES, SCOTT A |
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| HOUSTON, TX 77042-4299 | | | | |
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| ART UNIT | | PAPER NUMBER | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/532,646 | GOUJON ET AL. | |
| | Examiner | Art Unit | |
| | SCOTT A. HUGHES | 3663 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 03 March 2009.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-31 is/are pending in the application.
 4a) Of the above claim(s) 20-31 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 25 April 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/3/2009 has been entered.

Response to Arguments

Applicant's arguments filed 3/3/2009 with respect to the rejections under 35 USC 102(e) and 35 USC 103 over Oldervoll have been fully considered but they are not persuasive.

Applicant argues that Oldervoll does not show a stress member extending continuously through the sensor housing as recited in the claims. Applicant argues that Oldervoll's stress member is external to the housing. This argument is not persuasive as the claims recite that the stress member has to extend continuously through a sensor module. Oldervoll discloses that the strength member extends continuously through the sensor module that is attached to the seismic cable. Oldervoll shows the stress member extending continuously through the sensor module 102 by entering a first end 208 and exiting a second end 208. Oldervoll discloses that the stress member is continuous, and discloses the stress member coupling to and passing through the sensor modules attached to the cable (Figs. 1-3). Applicant's argument that Oldervoll at

best shows the stress member passing through only that part of the sensor module that attaches the module to the cable are not persuasive. Applicant's claims do not recite which parts of the sensor module the stress member must specifically pass through, or how the stress member passes through the sensor module. Therefore the disclosure of Oldervoll showing the stress member passing continuously through both ends of the sensor module meets applicant's claim limitation.

Applicant's arguments that Oldervoll expressly states that the stress member is mechanically coupled to the sensor housing rather than extending continuously through the sensor module are not persuasive. Although Oldervoll states that the stress member is coupled to the sensor housing 210, the sensor housing 210 is not what is being read as applicant's claimed sensor module. Instead, the sensor housing is the specific housing of the actual seismic sensor that is just a part of the structure that meets applicant's limitation of a sensor module. As seen in Figs. 1-3 of Oldervoll, the sensor housing 210 is just a part of the sensor module 102. Therefore, the fact that the stress member is coupled to the housing by some means does not mean that it does not pass continuously through the sensor module as a whole. As seen in Fig. 2 of Oldervoll, the stress member passes continuously through the sensor module, entering the module at one end 208 and exiting at the other end 208 without termination.

Applicant argues that each of the independent claims recite an internal stress member because they recite a stress member continuously through the sensor module. Applicant then argues that Oldervoll teaches that internal stress members are undesirable, and that Oldervoll therefore teaches away from the claim limitation. This

argument is not persuasive. Even though Oldervoll teaches that traditional internal stress members are not desirable, Oldervoll is discussing stress members that are an internal part of the seismic cable including the conductors and other elements of the cable. Oldervoll is not discussing stress members that are internal to any part of a sensor module in these references to internal stress members being undesirable. The claims do not contain limitations as to whether the stress member is an internal or external part of the cable itself. The claims only require that the stress member extend continuously through the sensor module independently of any lead. Oldervoll teaches this limitation as shown in Figs. 1-3 by teaching a stress member external to the seismic cable containing the leads (therefore independent of the leads) that extends continuously through a sensor module 102.

Applicant's arguments that Oldervoll cannot be combined with Bevan or Carpenter because Oldervoll teaches away from the approach of using an approach including incorporating the strengthening structures into the seismic cable itself are not persuasive. Carpenter and Bevan were not used to teach changing the structure of the strength member of Oldervoll to make it an incorporated part of the cable. Instead, Bevan was cited to teach using a sheath surrounding the strength member and cable lead elements in order to protect the leads and strength member from the environment. Incorporating such a sheath surrounding the strength member and leads in Oldervoll does not change the function of the stress member as an external stress member in Oldveroll. Carpenter was cited as teaching a particular type of winding for the leads in the cable, and not for any modification to the stress member or arrangement of the

stress member in Oldervoll. The modification to include S-Z windings as taught by Carpenter modifies only the cable leads in Oldervoll and provides the advantage of taking away possible strain on the conductors. Therefore, applicant's arguments that Oldervoll is not combinable with Bevan or Carpenter are not persuasive. Although Bevan and Oldervoll teach different types of stress members, the specific teachings of Bevan and Carpenter used to modify Oldervoll does not change the function or type of stress member used in Oldervoll. Oldervoll's teaching of an external stress member is not changed by the cited portions of Carpenter and Bevan for modifications to the conductor windings in the lead cables or the addition of a protective sheath.

Applicant's arguments that neither Bevan nor Carpenter provide an ability to decouple the sensor from the cable are not persuasive, as neither reference was cited to teach this feature or to teach any modification to this feature in Oldervoll.

Applicant's arguments with respect to the rejections based on Oldervoll are therefore not persuasive.

Applicant's arguments are sufficient to overcome the rejections of claims 1-19 as being obvious over Bevan, Barr, Carpenter, and Stephen. The rejection of claims 1-19 under 35 USC 103 based on Bevan, Barr, Carpenter, and Stephen are withdrawn.

Applicant's arguments and amendments to the claims are sufficient to overcome the previous rejections under 35 USC 112.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 and 7-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Oldervoll (US20030223822).

With regard to claim 1, Oldervoll discloses a seabed seismic cable (abstract). Oldervoll discloses a sensor module 102, 210 (Figs. 1C, 2, 3). Oldervoll discloses at least one first lead 206 to or from the sensor module (Fig. 2) ([0021-0024]). Oldervoll discloses a geophone housed in the sensor module ([0027]). Oldervoll discloses a stress member 202 extending continuously through the sensor module independently of any lead (Figs. 1C, 2, 3) ([0021-0024]). Oldervoll discloses a first sheath 200 enclosing the first lead and the stress member, the first sheath terminating at each end of the sensor module (Figs. 2-3) ([0023]). Oldervoll discloses at least one mechanical guide 208, 214 in the sensor module deflecting the stress member (Figs. 2-3) ([0024-0025]).

With regard to claim 2, Oldervoll discloses that the sensor module includes a hydrophone and accelerometer ([0027]).

With regard to claim 3, Oldervoll discloses that the sensor module houses electronics for converting analogue signals to digital signals ([0027]).

With regard to claim 4, Oldervoll discloses a second lead 204 extending continuously through the sensor module (Fig. 2).

With regard to claim 5, Oldervoll discloses that the second lead is attached to the stress member (Fig. 2) ([0021-0024]).

With regard to claim 7, Oldervoll discloses that the mechanical guide 208,214 deflects the second lead (Fig. 2) ([0021-00245]).

With regard to claim 8, Oldervoll discloses that the second lead is an electrical lead ([0021]).

With regard to claim 9, Oldervoll discloses a plurality of leads bundled into at least one bundle ([0021]).

With regard to claim 10, Oldervoll discloses that the bundled leads are enclosed by a protective covering ([0021]; [0023]) (Fig. 4).

With regard to claim 11, Oldervoll discloses that the leads are electrical leads ([0021]).

With regard to claim 12, Oldervoll discloses that the bundle is cylindrical in cross section (Fig. 4).

With regard to claim 13, Oldervoll discloses that the stress member is a steel rope ([0023]).

With regard to claim 14, Oldervoll discloses a pair of rings 214 disposed between the first sheet and the first lead and stress member against which the first sheath may be clamped to terminate the sheath (Figs. 2-3).

With regard to claim 15, Oldervoll discloses that the sensor module clamps the first sheath against the rings (Figs. 2-3).

With regard to claim 16, Oldervoll discloses that the first sheath comprises a jacket ([0021]; [0023]).

With regard to claim 17, Oldervoll discloses that the mechanical guide deflects the first lead (Figs. 2-3) ([0024-0025]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oldervoll as applied to claims 1-5 above, and further in view of Bevan (6519395).

With regard to claim 6, Oldervoll does not disclose a second sheath enclosing the second lead and the stress member. Bevan teaches an ocean bottom cable with signal leads and stress members attached to sensor modules (Figs. 2A-2C). Bevan teaches a second sheath 22 enclosing the at least one second lead and the stress member (Column 2, Lines 10-34). It would have been obvious to modify Oldervoll to include a second sheath surrounding the second lead and the stress member that extend continuously through the sensor module as taught by Bevan in order to protect the lead and stress member from the environment inside the housing.

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oldervoll (US20030223822) in view of Carpenter (4491939).

With regard to claims 18-19, Oldervoll discloses a seabed seismic cable (abstract). Oldervoll discloses a sensor module 102, 210 (Figs. 1C, 2, 3). Oldervoll discloses at least one lead 204, 206 to or from the sensor module (Fig. 2) ([0021-0024]). Oldervoll discloses a geophone housed in the sensor module ([0027]). Oldervoll discloses a stress member 202 extending continuously through the sensor module independently of any lead (Figs. 1C, 2, 3) ([0021-0024]). Oldervoll discloses a sheath 200 enclosing the leads and the stress member, the first sheath terminating at each end of the sensor module (Figs. 2-3) ([0023]). Oldervoll does not disclose that the leads are deployed with an SZ winding that changes in the sensor module. Carpenter teaches that it is known to use an SZ winding and teaches modifying this winding at a sensor location (Column 2, Line 67 to Column 3, Line 65 (Figs. 1-3). It would have been obvious to modify Oldervoll to include the different SZ windings for the conductors depending on whether they are at a sensor in order to be able to loosen the conductors to take away the strain of being placed around a sensor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT A. HUGHES whose telephone number is (571)272-6983. The examiner can normally be reached on M-F 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Scott A. Hughes/
Examiner, Art Unit 3663